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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,612	07/11/2001	Yoshiko Iida	35.C15566	7604

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
VUONG, JASON DUY ANH	
ART UNIT	**PAPER NUMBER**
2626	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/901,612	IIDA ET AL.	
	Examiner	Art Unit	
	Jason D. A. Vuong	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11 July 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 09-12-2001.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Image Processing Method and Program Capable of Reducing Graininess."

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of controlling the starting point in each line linking each vertex showing said plurality of chromatic colors and the vertex showing the black on said color space to independently produce the black component must be shown or the feature canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1, 2, 5, 6, 7, 8, and 10** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding **Claims 1, 2, 5, 6, 7, 8, and 10**, the claimed method for controlling a starting point (Page 36 Lines 2-3 and 19-21, Page 37 Line 24, Page 38 Lines 1, 5, 16-17, 24-25, Page 39 Lines 2, 9, and 13, and Page 40 Lines 13 and 20) is not disclosed in the specification. The closest disclosure can be found on pages 8 (controlling the K ink amount), 18 (K ink amount and the UCR amount can be fairly controlled), 19 and 20 (K ink amount and UCR amount are controlled), and 29 (a Bk point is taken as a starting point 0) of the specification. The specification does not explain how this is performed; without the detailed explanation or teaching, one of ordinary skill in the art would have burdened by undue experimentation to make or use the claimed invention.

3. **Claims 4, 5, 6, 9, and 10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **Claim 4**, **Claim 4** recites the limitation "said color reproduction" in Lines 13-14. There is insufficient antecedent basis for this limitation in the claim.

Regarding **Claims 5 and 10**, the phrase "identical system color reproduction" (Page 37Lines 22-23, and Page 40 Line 11) is considered as being indefinite because it is unclear what color system it refers to.

Regarding **Claims 5, 6, and 10**, the phrase "dark recording material" (Page 37 Lines 24-25, Page 38 Lines 6-7, 10-11, and 18, and Page 40 Lines 14, 21-22, and 25-26) is considered as being indefinite because it is unclear whether it refers to the black ink or color inks with high densities.

Regarding **Claims 5, and 10**, the phrase "light recording material" (Page 38 Line 8, and Page 40 Line 23) is considered as being indefinite because it is unclear whether it refers to the white color or color inks with low densities.

Regarding **Claim 9**, **Claim 9** recites the limitation "said color reproduction" in Lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Regarding **Claim 10**, **Claim 10** recites the limitation "said complementary color component" in Line 24. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claim 1, 2, 3, 5, 6, 7, 8 and 10** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,982,990 to Gondek.

Regarding **Claim 1**, Gondek discloses an image processing method for controlling a starting point (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) which produces a black component (see Figure 4 Step 34, and refer to Column 4 Lines 44-45) between vertices showing a plurality of chromatic colors (refer to Figure 3) and a vertex showing a black (refer to Figure 3) in a reproducible color space of a color output apparatus (refer to Figure 1 Element 14) when a look-up table (refer to Column 11 Lines 43-48) is prepared to convert an input color signal into a plurality of color components including a black component (see Figure 4 Step 34, and refer to Column 4 Lines 44-45),

wherein the starting point which produces said black component based on the value of the complementary color component corresponding to the chromatic color which is inconspicuous in a graininess of a black recording material in an output image is controlled (refer to Column 6 Lines 12, 18-19, and Column 7 Lines 10-15).

Regarding **Claim 2**, the image processing method according to **Claim 1**, wherein, in each line linking each vertex showing said plurality of chromatic colors and the vertex showing the black on said color space, the starting point independently producing said black component is controlled (refer to Column 7 Lines 30-33, and Figure 3).

Regarding **Claim 3**, the image processing method according to **Claim 1**, wherein, from said black component starting point to the vertex showing said black, the

chromatic color component and the complementary color component and the black component are calculated by using a function (refer to Column 6 Lines 30-35, 44-52, and Column 10 Lines 15-22).

Regarding **Claim 5**, a image processing method for preparing a color conversion look-up table (refer to Column 11 Lines 43-48) for a color image forming apparatus for forming a color image by using a plurality of recording materials different in density (refer to Column 3 Lines 49-53, and Figure 2) used in a black recording material and an identical system color reproduction,

wherein the starting point which produces a dark recording material (the K and the C and M components, refer to Column 4 Lines 44-45) in the interval between the vertices showing a plurality of chromatic colors and the vertex showing the black (refer to Figure 3) in the reproducible color space of the color output device is controlled (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) when the look-up table (refer to Column 11 Lines 43-48) to convert the input color signal (RGB signal, refer to Figure Step 30) into a plurality of color components including the black component (CMYK or $CMYL_CL_MK$) is prepared, and

the starting point is controlled (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28), which produces a color component corresponding to a dark recording material (the K and the C and M components, refer to Column 4 Lines 44-45) based on the value of the color component corresponding to a light recording material (the Y component, refer to Column 4 Lines 44-45) concerning

said complementary color component which is indistinguishable in the graininess (refer to Column 6 Lines 12, 18-19, and Column 7 Lines 10-15) of said dark recording material concerning the complementary color component corresponding to the chromatic color in an output image.

Regarding **Claim 6**, the image processing method according to **Claim 5**, wherein the starting point producing said black component is controlled (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) based on the value of the color component corresponding to the dark recording material (the K and the C and M components, refer to Column 4 Lines 44-45) concerning said complementary color component which is inconspicuous in the graininess (refer to Column 6 Lines 12, 18-19, and Column 7 Lines 10-15) of the black recording material (the K component, refer to Column 4 Lines 44-45) in the output image.

Regarding **Claim 7**, the image processing method according to **Claim 5**, wherein the starting point independently producing said black component is controlled (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) in respective lines liking respective vertices showing said plurality of chromatic colors and the vertex showing the black (refer to Figure 3).

Regarding **Claim 8**, a program for realizing an image processing method for controlling a starting point (refer to the Specify Control Points section from Column 7

Line 39 to Column 9 Line 28) which produces a black component between vertices showing a plurality of chromatic colors and a vertex showing a black (refer to Figure 3) in a reproducible color space of a color output apparatus when a look-up table (refer to Column 11 Lines 43-48) is prepared to convert an input color signal into a plurality of color components including a black component (refer to Column 4 Lines 44-45),

wherein the starting point which produces said black component based on the value of the complementary color component corresponding to the chromatic color which is inconspicuous in a graininess (refer to Column 6 Lines 12, 18-19, and Column 7 Lines 10-15) of a black recording material in an output image is controlled (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28).

Regarding **Claim 10**, a recording medium for recording a program for preparing a color conversion look-up table (refer to Column 11 Lines 43-48) for a color image forming apparatus for forming a color image by using a plurality of recording materials different in density (refer to Column 3 Lines 49-53) used in a black recording material and an identical system color reproduction, said program comprising the steps of:

controlling the starting point (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) which produces a dark recording material (the K and the C and M components, refer to Column 4 Lines 44-45) between vertices showing a plurality of chromatic colors and the vertex showing a black (refer to Figure 3) in a reproducible color space of a color output device when the look-up table (refer to Column 11 Lines 43-48) converting an input color signal into a plurality of color

components including a black component (including K, refer to Column 4 Lines 44-45) is prepared, and

controlling the starting point (refer to the Specify Control Points section from Column 7 Line 39 to Column 9 Line 28) which produces a color component corresponding to a dark recording material based on the value of said color component corresponding to a light recording material (the Y, L_C, and L_M components, refer to Column 4 Lines 44-45) concerning said complementary color component which is indistinguishable in the graininess (refer to Column 6 Lines 12, 18-19, and Column 7 Lines 10-15) of said dark recording material concerning the complementary color component corresponding to the chromatic color in an output image.

Allowable Subject Matter

5. **Claims 4 and 9** are allowable.

6. **Claims 4 and 9** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraphs, set forth in this Office action.

7. The following is a statement of reasons for the indication of allowable subject matter: the current invention discloses an image processing method and program for converting an input color signal into a plurality of color components including a black component.

Claim 4 cites an image processing method for preparing a look-up table for an input color signal into an output color signal constituted by a plurality of color components. The claimed method comprises: a method for setting up a lattice point between a vertex showing the chromatic color and a vertex showing the black in a reproducible color space, and an interval between the vertex showing the chromatic color and the vertex showing the black is divided into a plurality of areas different in the combination of a color component, and a lattice point is set up according to a ratio of each area between the vertex showing the chromatic color and the vertex showing the black.

Claim 9 cites a program for realizing an image processing method for preparing a look-up table for converting an input color signal into an output color signal constituted by a plurality of color components wherein the program is intended for setting up a lattice point between a vertex showing the chromatic color and a vertex showing a black in a reproducible color space, and an interval between the vertex showing the chromatic color and the vertex showing the black is divided into a plurality of areas different in the combination of the color component, and a lattice point is set up according to a ratio of each area between the vertex showing the chromatic color and the vertex showing the black.

Such features in combination with other elements of the claims are not disclosed or suggested by the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications should be directed to Jason Vuong at 703-306-4157. The examiner can normally be reached on Monday-Friday from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached at 703-305-4863.

KAWilliams

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER